

REMARKS

Applicants appreciate the continued thorough examination of the present application that is reflected in the Final Office Action of January 22, 2008 ("Final Action"). Claims 1-19 are pending in the application. Applicants particularly appreciate the indication that Claims 8-12 are allowed. Applicants further appreciate the detailed Response to Arguments provided at pages 2-5 of the Final Action. Applicants have carefully reviewed the Final Action and respectfully request reconsideration of the rejection of Claims 1-7 and 13-17 for at least the reasons explained below. Claims 18-19 have been cancelled without prejudice to expedite prosecution of the remaining claims.

Applicants have presented amendments to Claims 1 and 13. Applicants submit that these amendments are clarifying in nature and that they raise no issues requiring a new search. Furthermore, Applicants submit that these amendments place the application in condition for allowance and are therefore permissible under 37 CFR 1.116. See MPEP 714.12. Applicants therefore respectfully request entry of these amendments. Should entry of these amendments be denied, Applicants nonetheless request reconsideration for the reasons explained below.

In the following remarks, Applicants will only address particular issues raised in the Response to Arguments section of the Final Action. In order to ensure that the present response is fully responsive, however, Applicants hereby incorporate by reference Applicant's "Response to August 22, 2007 Office Action" filed on November 14, 2007 (the "November 14, 2007 Response") as if fully set forth herein.

1. The Final Action Fails to Accord Proper Patentable Weight to the Recitations of Claim 1

Claim 1 stands rejected under 35 USC § 103(a) as unpatentable over U.S. Patent No, 5,778,073 to Busching et al. ("Busching") in view of U.S. Patent No. 5,732,113 to Schmidl et al. ("Schmidl"). In the November 14, 2007 Response, Applicants noted that Busching is not directed to an OFDM receiver. The Final Action states that the term "OFDM signal" has not been given patentable weight because the recitation occurs in the preamble. The Final Action states that a preamble is not accorded any patentable weight "where the body of the claim does not depend on the preamble for completeness, but instead, the process steps or structural limitations are able to stand alone." Final Action , page 2.

The failure to give patentable weight to the term OFDM symbol is mistaken.

Applicant notes that the preamble of Claim 1 recites "an orthogonal frequency division multiplexing signal having a symbol, the symbol including a first long preamble and first data." The body of Claim 1 refers repeatedly back to the preamble of the OFDM signal, and recites detailed structure that operates on portions of the first long preamble of the OFDM signal, including the first long preamble and the first data. In particular, Claim 1 recites:

- "a timing acquisition section that is configured to output a timing signal in response to detecting an end point of the first long preamble"; and
- "a signal converter that is configured to store the first long preamble in response to the first control signal, to transform the first long preamble by a fast Fourier transform into a second long preamble, to store the second long preamble, to transform sequentially the first data ..."

Accordingly, the body of the claim depends for completeness on the OFDM signal recited in the preamble. The recitations of Claim 1 that relate to an OFDM signal having a symbol including a first long preamble and first data should be given appropriate patentable weight. When such appropriate weight is given, it is clear that Busching, which deals with speech encryption and decryption, is not relevant to the patentability of Claim 1.

2. Busching Does Not Disclose a Frequency Domain Equalizer

The Final Action concedes that Busching does not expressly disclose a frequency domain equalizer. However, the Final Action contends that the equalizer 51 *is* a frequency domain equalizer, since the equalizer 51 "is employed to equalize the frequency domain response of the transmission channel in the region of the transmission bandwidth form." Final Action, page 2. The logic and conclusion of the Final Action are flawed. Applicants explained in the November 14, 2007 Response that the equalizer 51 operates on a sampled time domain signal output by the analog front end 52a. The equalizer 51 does not operate in the frequency domain, and therefore is not a frequency domain equalizer, unlike the frequency domain equalizer 240 illustrated in Figure 3 of the present application.

The fact that the operation of the equalizer 51 has some effect on the frequency domain response of the transmission channel does not make it a "frequency domain equalizer," because any operation on a time domain signal necessarily has an effect on the

frequency domain representation of that signal. Thus, the logic employed in the Final Action essentially vitiates the term "frequency domain" in the claimed "frequency domain equalizer."

3. Busching Does Not Perform FFT Processing in the Demodulation of an OFDM Signal

In the Applicants' November 14, 2007 Response, Applicants noted that "[a]s the received signal is not an OFDM signal, no FFT processing is performed during the demodulation thereof." The Final Action incorrectly characterized this statement as stating that "Busching does not teach or suggest that FFT processing is performed during the demodulation." Final Action, page 3. The Final Action then attacks this straw man by noting that Busching discloses that a pulse response and filter coefficients are calculated with the aid of an FFT. Final Action, page 3. However, the Final Action ignores the fact that Busching does not teach or suggest FFT processing an OFDM signal. Thus, the conclusion in the Final Action that "an FFT processing is performed during the demodulation" is irrelevant.

CONCLUSION

For at least the reasons explained above, Applicants respectfully submit that the rejections of Claims 1-7 and 13-17 is improper and should be withdrawn. Applicants respectfully submit that the application is in condition for allowance, and request issuance of a Notice of Allowance in due course.

If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (919) 854-1400.

Respectfully submitted,



David C. Hall
Registration No. 38,904
Attorney for Applicants

Customer Number 20792

Myers Bigel Sibley & Sajovec, P.A.
P.O. Box 37428
Raleigh, NC 27627
919-854-1400
919-854-1401 (Fax)